

**Notice of Allowability****Application No.**

10/536,813

**Examiner**

NANCY BITAR

**Applicant(s)**

MAKRAM-EBEID, SHERIF

**Art Unit**

2624

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 12/08/2008.
2. ☒ The allowed claim(s) is/are 1-7 and 10-13.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some\* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),  
Paper No./Mail Date 20081216.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_.

/Nancy Bitar/  
Examiner, Art Unit 2624

/Jingge Wu/  
Supervisory Patent Examiner, Art Unit 2624

**EXAMINER'S AMENDMENT**

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Yan Glickberg on 12/16/2008.

The application has been amended as follows:

Claim 1(Amended):

Please delete on line 13 page 4 "and/or" and insert "and"

Claim 8(Cancelled)

Claim 10 (Amended)

Please delete on line 10 page 5 "and/or" and insert "and"

***Allowable Subject Matter***

2. Claims 1-7, 10-13 are allowed.
3. The following is an examiner's statement of reasons for allowance: After reviewing the remarks made by the Applicant in response to the non-final office action the Examiner finds the remarks to be persuasive. The most pertinent prior art is Netsch et al ( Towards real time multi-modality 3D medical images registration , IEEE 2001) and Haddad et al ( A new orthogonal transform of signal coding, IEEE 1988) and Dominique et al. (EP 0480807) Dominique et al teaches phase correlation, that is to say correlation between the two-dimensional discrete

transforms of a reference image and of a current image, normalized with respect to its modulus, then an inverse Fourier transformation of the correlation matrix obtained in order to find a correlation peak in the spatial domain of the images, in which, in order to diminish the effects of noise in this processing and enhance the mean components, a weighting function is applied to the correlation matrix in the transformed plane before carrying out the inverse Fourier transformation. Haddad et al. teaches the use orthogonal transform for signal coding where with the use of Hermite transformation where the MHT algorithm requires only  $2N$  real multiplications or divisions for a transformation of a signal block of  $N$  samples. The MHT algorithm is also used for the inverse transformation, IMHT. The MHT algorithm makes this new transform very attractive. It is efficient computationally and comparable to the industry standard, the DCT, for the source models with positive correlation coefficients; it is somewhat better than the DCT for negative correlation coefficients (see abstract). Neither Dominique et al nor Haddad et al teaches evaluating an inverse of the Hermite Transform (HT<sup>-1</sup>) is performed to compute said windowed correlation function ( $K(v)$ ), correlating the shapes, repeating the steps of determining the correlation function, as many times as necessary in order to reach a best possible correlation function by modifying at least one rotation matrices ( $R_1, R_2$ ), at least one scaling factor ( $\{z_k\}$ ) and by increasing a number of indices ( $1$ ) if more accuracy is needed. The Examiner finds no reason or motivation to combine the above references in an obviousness rejection thus placing the application in condition for allowance.

Any comments considered necessary by applicant must be submitted on later than the payment of the issue fee and to avoid processing delays should preferably accompany the issue

fee. Such submissions should be clearly labeled, comments on statement of reasons for allowance.

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NANCY BITAR whose telephone number is (571)270-1041. The examiner can normally be reached on Mon-Fri (7:30a.m. to 5:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on 571-272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jingge Wu/  
Supervisory Patent Examiner, Art Unit 2624

Nancy Bitar

12/17/2008